

# THE CASE FOR FINANCIAL INSTRUMENTS (NOTES)<sup>1</sup>

Long-term climate change policy requires various parties to make long term credible commitments into the future. Financial instruments such as bonds or derivatives, are ideal instruments to do so. We investigate the potential for guaranteeing the future carbon, electricity and post-tax energy prices.

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## **The Need for Investment**

Investment in low-carbon technologies can be promoted by a stable or smoothly increasing price of carbon, or by derivative instruments that guarantee the future price. Such investment would liberate the economy from a 'blocking circle' of existing fossil-fuel and national interests preventing the policies needed to promote investment in new low or zero-carbon energy supply. Measures to guarantee the future price of carbon would be financial contracts similar to government bonds, and thus have the further advantage of being more credible instruments than international treaties that have ratification and compliance issues.

## **Financial Instruments based on otherwise-determined price**

It might be possible to commit future governments to carbon policy through financial instruments. If there is an international-instituted price of carbon, then the government could enter into derivative contracts on this price. Options or futures could be used. The simplest approach is to use contracts for difference, a derivative that pays the difference between a strike price and the price of the reference entity. An option is formulated as a 'one-sided-contract for difference'.

A one sided contract for difference would pay out if the future carbon price falls below the strike price in the future. There is one important condition for this to work: there needs to be a credible carbon price. Although I have presented here reasons why a coordinated tax might be preferred, an alternative proposition would be a cap and trade system where a proportion of permits are held back and then auctioned by a central global agency, the World Bank or the IMF for example.

## **Derivative Contracts - Issues**

Thus there are challenges in instrument design. An important design feature of derivative contracts is the reference quantity. It needs to be something observable and permanent. In this particular case, this reference entity is the price of carbon: in the near term the EU ETS. Since the terms are long and the concurrent danger is institutional lock-in, the derivatives need to be structured so that they are flexible to future system changes: for example replacing the ETS with a European carbon tax.

## **What Is Credible? Issuance of Long-term Government Bonds**

Even if they do sign, they can refuse to ratify those agreements, and even if they ratify they can refuse to be bound by them. Nevertheless governments of nation-states do bind their future incarnations everyday in a trustworthy fashion. They do so by issuing financial instruments such as bonds. By loans which factor in the money now, the present government commits future government to paying the money back with interest. Furthermore, this commitment is credible; western governments do not generally default on their debt.

## **Further Reasons In Favour of Price - Investment Guarantees**

Prices are also highly relevant to investment. It is prices that determine outcome, not quantities. Volatile prices will lead to investment being delayed. Stable long term carbon prices will promote low carbon investment; uncertain prices may lead to delay. If agreement is being blocked by the well-organised fossil fuel lobbies, then the level of low-carbon capital stock may well be highly relevant to the politics of any agreement. We may need, in effect, to create the elements of a low-carbon electricity supply while phasing out high-carbon capital.

## **What Price?**

Price works. Increasing the price of energy that releases greenhouse gases will reduce the consumption of such energy. This is known from basic economics. Assuming that individuals wish to satisfy their desires with the least effort, increasing the price of one commodity will mean that

more desires can be satisfied by another commodity than this one. Increasing the price of carbon will have a number of effects. One example of the importance of increasing the price of energy is in the realm of financing energy efficiency improvements.

## Carbon Price Guarantees

What do governments do best? Security. The first purpose of the state is to provide protection of the person against violence; the second is of protection of the rights of private property. So the most obvious purpose to the state in regard to climate change mitigation is as protector of certain rights. The rights that the state is best in protecting are the rights that *it itself* grants.<sup>2</sup>

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### 2 Fossil Energy Price Guarantees

- Post-tax prices of coal, natural gas, and oil would be guaranteed
- Coal price falls below this point, we
- If the post-tax retail price of natural gas falls below X, then you will be paid the difference.

Household borrows money and purchases a price guarantee, ensuring that the investment makes sense.

Making it positively framed:

Guaranteed Returns - (Partly Self Fulfilling Prophecy, partly subsidy) - Link with Financing - New (good) Banks -- e.g national investment bank

Boom of real activity keeps the whole economy afloat

- international thinking
- positively framed
- binding
- laws and protocols
- price not quantity
- Unifying Climate Change Targets and Investment Opportunities
- Avoid rent Seeking
- Avoid 'unnatural tragedy of the commons'